J. Perinat. Med.
13 (1985) 163

Elective induction of labor: a prospective clinical study, II: Psychological effects

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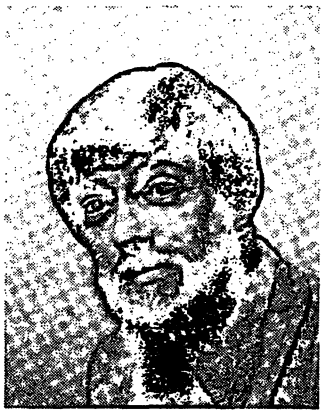
1 Introduction

Little is known about the psychological effects of elective induction of labor. In most studies no distinction is made between elective induction and induction for medical reasons. Accordingly, psychological influences of the complications that led to induction of labor cannot be excluded. A second reason for our lack of knowledge is that prospective studies are scarce. Only in a prospective study, pre-existing psychological differences between women opting for elective induction and women choosing a spontaneous onset of labor can be assessed. In a previous study, differences between these two groups are described relating to menstrual and pregnancy complaints, anxiety about labor, parity, educational level and religious affiliation [16].

In his reviews, RICHARDS [17, 18] warns against possible negative effects on the mother-infant relationship due to some complications of induction of labor such as cesarean section, forceps delivery, high doses of analgesics, prematurity and neonatal hyperbilirubinemia, but he does not mention a single study in which such effects on mother-infant interaction of elective induction of labor were directly demonstrated. Although a number of reports indicate that forceps delivery and repeat administration of analgesia occur more frequently in induced than in spontaneous labor [3, 9, 21, 22, 23, 24], two studies including more than 2000 patients each [2, 5] do not demonstrate early mother-infant separation as an important negative psychological sequela of induction of labor. On the other hand KITZINGER [11] found more cases of mother-infant separation after induction of labor in a highly selective patient population. OUNSTED et al. [14] found that more women with induced labor (for medical reasons) did not carry through with their intention to breast-feed than women with a spontaneous onset of labor.

With regard to the subjective evaluation of labor as a whole, no great differences between

Curriculum vitae



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women with induced labor and those with a spontaneous onset are reported [3, 12]. Nevertheless, various reports indicate that more women with induced labor complain about labor pains, and that pain-relieving drugs are administered more frequently during induced than during spontaneous labor [3, 12, 15, 19]. The shorter duration of labor when induced does not seem to be very important to parturient women [12]. Electronic fetal monitoring, which is almost always used in induced but not in spontaneous labor, usually appears to enhance feelings of safety, but sometimes feelings of discomfort are reported [7, 10, 20, 21]. More favorable results are reported with telemetric fetal monitoring [4, 8].

The present study was designed as part of a prospective investigation of the obstetric and neonatal effects of elective induction of labor [16, 22, 23] in order to determine the effects of induction on women's experiences during labor and on early mother-infant interaction.

2 Subjects and methods

2.1 Subjects

The study encompassed 271 women who attended the antenatal clinic of the University Hospital Dijkzigt at Rotterdam and who were delivered in the same hospital. Informed consent was obtained in all cases. All women had a Dutch cultural background and an uncomplicated pregnancy as defined in our report on the obstetric part of the project which also described the methods used for induction [23]. Elective induction was defined as an induction opted for by the women. Cases in which induction had been advised by the obstetrician were excluded. In 72 women, labor was electively induced, and 199 women had spontaneous labor. Some women in the latter group had opted for induction, but their labor began spontaneously before induction could be performed.

2.2 Design of the study

For each subject, data regarding age, marriage, education, occupation and husband's occupation were collected. In the 36th week of pregnancy all women completed a questionnaire of 91 questions about their pregnancy and expectations about labor, delivery and motherhood [see 16]. In the 38th week the women were asked to choose between elective induction and spontaneous onset of labor, after having received written information about induction a week earlier.

Obstetric data such as length of labor and pain medication were recorded. In a group of 33 mothers which were part of the sample (14 with elective induction and 19 with spontaneous labor), the first ten minutes of their interaction with their infant were recorded on videotape and subsequently judged by five previously trained observers with regard to attachment behavior and emotional involvement of the mother with her infant. The observers were not informed about the purpose of the study.

Two hundred and nine women were interviewed on the fourth or fifth day after delivery about their experiences of labor, delivery and motherhood. No interview data were obtained from 15 (21%) women with elective induction and 47 (24%) women with spontaneous labor due to the fact that they were discharged on the first day after delivery.

Six months after delivery a questionnaire was mailed to the 271 subjects who participated in the study to obtain information about their opinion at that time about their labor and about the state of health of mother and infant and about nursing the infant. This questionnaire was returned by 92% of the women.

WILCOXON's tests and the chi-square method were used for statistical evaluations of differences in outcome between the two groups. A p-value of ≤ 0.05 was chosen as the level of significance.

3 Results

The results of the observations of the first contact of 33 mothers with their infants are shown in Fig. 1. On two of the thirteen criteria used for evaluation of maternal attachment,

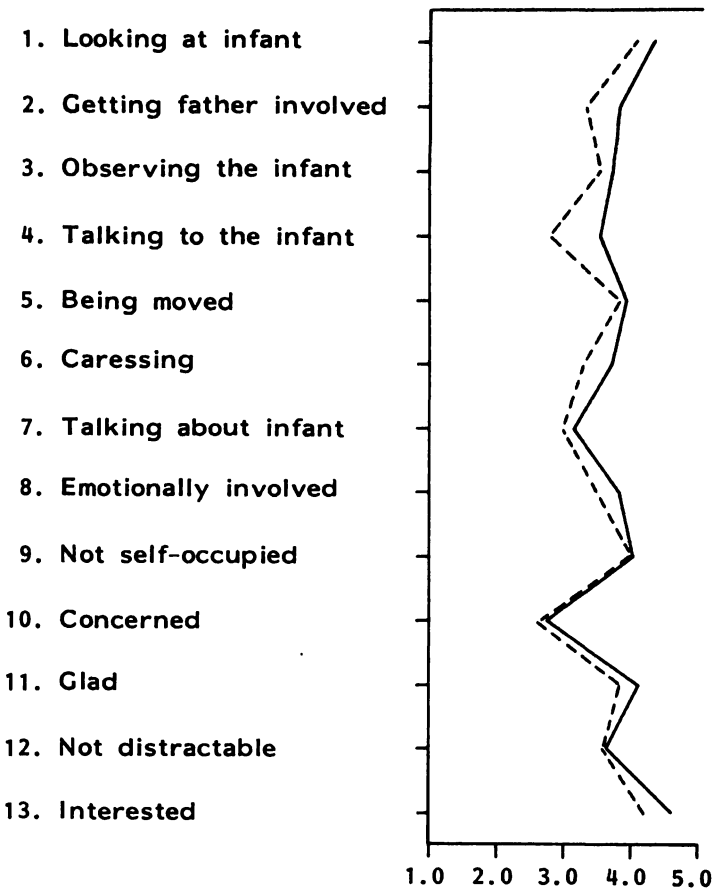

Fig. 1. Emotional involvement of mothers with their newborn after electively induced (----) or spontaneous (——) labor.

mothers with induced labor were judged as being equally attached to their infant as mothers with spontaneous labor. For all other criteria mothers with spontaneous labor were judged as being more attached. None of these differences reached statistical difference.

The interviews did not reveal marked differences in experiences of labor between the two groups (Tab. I). For half the number of women in both groups the experience of labor was better than expected. Women with spontaneous labor were more tired during labor than women with elective induction. This difference disappeared after delivery. There was a significant difference in length of labor time: a mean of 7 hours and 4 minutes for women with spontaneous labor and 5 hours and 12 minutes for women with elective induction ($p < 0.001$), but the subjectively perceived duration was equal in both groups. The difference in drowsiness did not reach statistical significance. No differences were apparent in reported experience of pain and anxiety during labor, and in the descriptions of the newborns. Pain medication (one or two doses of 75 mg of pethidine-HCl) was given to a greater percentage of women with elective induction (53%) than with spontaneous labor (27%); the difference is significant ($p < 0.001$).

One woman who was induced and seven women with spontaneous labor were not accompanied during labor by a partner. In both groups about 60% of the women needed surgical repair of an episiotomy or rupture, and half of the women in both groups complained about their health or well-being during the puerperium. No signifi-

Tab. I. Results from the interviews about labor and delivery in women with spontaneous labor (n = 157) and women with elective induction (n = 52).

	Spontaneous labor (%)	Elective induction (%)
Labor better than expected	50	52
Pain unbearable	39	39
Labor did not last long	67	67
Anxious during labor	44	40
Tired during labor	59	39*
Tired after labor	27	33
Drowsy during labor	41	57
Drowsy after labor	15	18
Positive description of newborn	42	35
Complaints about health and well-being during puerperium	49	50

* $p < 0.05$.

cant differences could be demonstrated between the groups with regard to feelings of health or well-being of the mothers in the first half year after delivery. Differences with respect to nursing problems and health of the infant (Fig. 2) were small and not significant. However, babies of mothers who had a spontaneous onset of labor were perceived to cry more than babies of mothers with elective induction ($p < 0.05$).

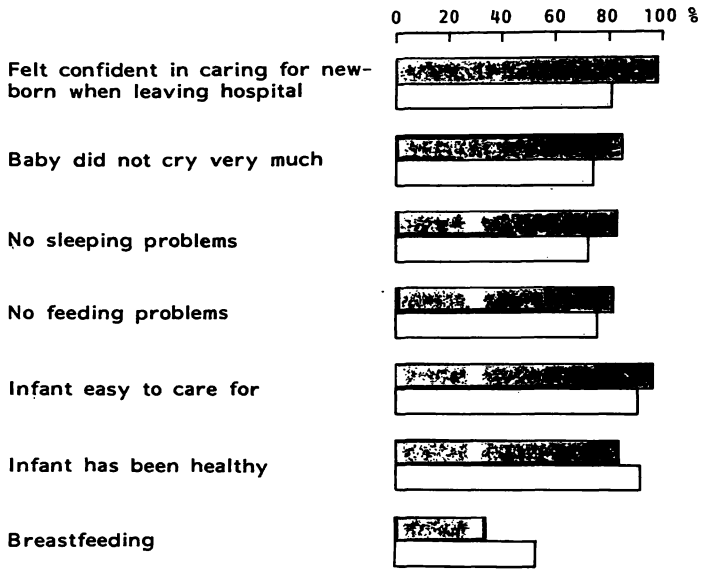

Fig. 2. Nursing and problems with nursing in the first half year after elective induction (■) or spontaneous labor (□).

When they left the hospital mothers who had elective induction of labor felt more confident that they could take care of their newborn than mothers with spontaneous labor ($p < 0.01$). The number of mothers who breast-fed their infant was significantly larger in the group with spontaneous onset of labor than in the elective induction group ($p < 0.01$), but the duration of breast-feeding in the two groups was not different.

When asked which mode of labor they would choose next time, 93% of women with spontaneous labor said they would again choose spontaneous labor. In the group with elective induction of labor, 68% said they would again opt for elective induction.

With linear regression analysis [6] the influence of personal characteristics on these differences in outcome was analyzed, especially with regard to characteristics in which the two groups differed before labor [16]. In no case was the influence of mode of labor eliminated statistically.

With respect to the use of analgesic drugs three other variables were found to contribute significantly to the differences in outcome between groups, apart from the contribution of mode of labor. Parity (more nulliparae than multiparae received analgesic drugs), the expectation to be anxious during labor and menstrual complaints were also significantly associated with the administration of analgesics.

In the analysis of perceived differences in intensity of crying of the baby between the two groups, no other variables were found to contribute to these differences.

In addition to differences in mode of labor two other variables appeared to contribute significantly to differences in feelings of self-confidence in taking care of the newborn. Multiparae and women with few pregnancy complaints were more confident than primiparae and women with marked complaints about pregnancy. The separate influence of the mode of labor became evident in shifts in feelings of self-confidence: of the women who during their pregnancy feared to be clumsy in nursing their infant, slightly more women in the induced then in the spontaneous group became confident after delivery ($0.05 < p < 0.10$). A loss of pre-existing feelings of confidence occurred more often in women with spontaneous labor ($p < 0.01$).

Five other variables were significantly related to the frequency of breast-feeding. These included intentions to breast-feed, participation in childbirth education, absence of pregnancy complaints, a positive experience of pregnancy and educational level. Evidence of a separate influence of the mode of labor became apparent in differences in abandoning pre-existing intentions to breast-feed. This occurred in eight women (28%) in the induced group and in twelve women (11%) in the spontaneous group. However, this difference is not significant ($0.05 < p < 0.10$).

4 Discussion

The absence of differences between women with induced and women with spontaneous labor in their personal reports about their experience of labor is in accordance with other findings [5, 12]. The only significant difference found was that women with a spontaneous onset of labor were more tired during labor, which can be accounted for by the longer duration of spontaneous labor as compared with induced labor. Time experience seems hardly to be affected by the shorter duration of induced labor, a finding also reported by LEWIS et al. [12]. Like women with induced labor in CARTWRIGHT's study [5], women with induced labor in our study also received more pain-relieving drugs than women with spontaneous labor, resulting in equal levels of pain experience. This difference in pain medication can be partly explained by differences in anxiety levels between the two groups before labor.

Analgesics in low doses are not necessarily detrimental and may even be beneficial, as MYERS and MYERS [13] and BELSEY et al. [1] suggest. In our study, women in the induced group were more anxious before labor than women in the spontaneous group, while anxiety levels during labor were almost equal. The relative decline in anxiety level in the induced group may be due to the analgesics, although an influence of the induction cannot be excluded.

More differences between the two groups became apparent when the variables used to evaluate nursing and mother-infant interaction were considered. The differences found with regard to attachment or emotional involvement of mothers with their infant are very consistent, although not statistically significant. Due to the small numbers in the observed groups, control for pre-existing differences in personal characteristics between groups was impossible. Comparison within the total group before delivery between women choosing an elective induction and women opting for spontaneous onset of labor, failed to show differences in expectations about the infant and motherhood, except for self-confidence in caring for the newborn [16]. Therefore, it may be possible that elective induction has an influence on attachment behavior. The fact that the intention to breast-feed was abandoned more frequently in the group of women with elective induction leads to the same conclusion. It is not necessary to postulate a physiologic explanation for this phenomenon, as suggested by OUNSTED et al. [15]: women who do not choose the natural mode of labor may also more easily abandon their plans for the most natural way of feeding.

Differences in perceived crying of the infants could not be explained by pre-existing differences between their mothers. It is difficult to offer other explanations. An assumption of a favorable influence of elective induction of labor on crying of the infant lacks any theoretical basis.

Loss of feeling of self-confidence in the ability to take care of the newborn was greater in the spontaneous group, the gain of self-confidence was greater in the induced group. A previous study [16] showed that induction of labor is more often chosen by anxious women. Therefore, induction of labor seems to meet a want by enhancing feelings of self-reliance.

In conclusion, elective induction of labor seems to have an impact on a woman's feelings with regard to labor, delivery and the newborn: women in whom labor is electively induced become less anxious and more self-confident, whereas their emotional involvement with the newborn becomes somewhat depressed. These possible changes of feelings have to be reckoned with when a pregnant women and her doctor weigh the advantages and disadvantages of elective induction of labor.

Summary

Several authors have stated that induction of labor may have deleterious psychological effects on women's experiences of labor and early mother-infant interaction. Research on this subject is scarce and in most cases no distinction is made between elective induction and induction for medical reasons. For that reason the

observed effects may also have been caused by the medical complications that led to the induction. Differences in experience of labor may also be in part explained by differences in personal characteristics between women choosing or rejecting induction of labor. Influences of induction of labor can only be reliably assessed in prospective studies.

In the present study of 271 women with an uncomplicated pregnancy, data regarding their experiences of pregnancy and their expectations of labor and motherhood were collected before labor. In 72 women labor was electively induced, and 199 women had a spontaneous onset of labor. Of 33 women, 19 with spontaneous labor and 14 with elective induction, the first contact with their newborn was observed. All women who could be contacted were interviewed about their experience of labor and the first contact with their infant. Six months after delivery the mothers were questionned about the state of health of mother and infant and about nursing the infant.

Mothers with induced labor were rated as being generally less emotionally involved in the first contact with their newborn than mothers with spontaneous labor, but the differences were not significant (Fig. 1). The duration of spontaneous labor was longer, but the subjective time experience did not differ between groups. Women with spontaneous labor were more tired during labor. Analgesic drugs were given more often to women with induced labor. No differences were apparent in reported experience of pain and anxiety, drowsiness and in the evaluation of labor as a whole (Tab. I).

Six months after delivery no differences between the two groups were apparent with regard to the evaluation of labor, health of mother and infant, and nursing problems. Mothers with induced labor were more self-confident in taking care of their infant, but they less frequently breast-fed. Consistency with respect to the choice of the mode of labor in the next pregnancy was greater in women with spontaneous labor as compared with women with induced labor.

Differences in outcome between the two groups could only partly be explained by differences in personal characteristics. **It is concluded that in weighing advantages and disadvantages of elective induction of labor, possible changes in the feelings of the woman have to be taken into account: it seems likely that she will be less anxious and more self-confident when her labor is induced, but also emotionally less involved with her newborn, as compared with a woman with spontaneous labor.**

Keywords: Elective, experience of labor, induction of labor, mother-infant interaction.

Zusammenfassung

Programmierte Geburt — eine prospektive klinische Studie, II.: psychologische Auswirkungen

Verschiedene Autoren haben festgestellt, daß eine programmierte Geburt deletäre psychologische Auswirkungen auf das Geburtserlebnis und die frühe Mutter-Kind-Beziehung haben kann. Bei den wenigen vorliegenden Untersuchungen wird meistens nicht unterschieden, ob eine programmierte Geburt erfolgte oder ob eine Einleitung aus medizinischen Gründen vorgenommen wurde; d. h., auch die medizinischen Komplikationen, die zur Einleitung geführt haben, können die beobachteten ungünstigen Effekte ausgelöst haben. Persönlichkeitsbedingte Unterschiede zwischen den Frauen, die sich für oder gegen eine programmierte Geburt entscheiden, erklären nur zum Teil eine unterschiedliche Bewertung des Geburtserlebnisses. Nur prospektive Studien liefern aussagekräftige Daten über die Einflüsse einer programmierten Geburt.

In der vorliegenden Arbeit berichten wir über 271 Frauen mit unkomplizierter Schwangerschaft, die vor der Entbindung bezüglich ihrer Schwangerschaftserfahrungen sowie ihrer Erwartungen an die Geburt und Mutterschaft befragt wurden. 72 Frauen entschieden sich für eine programmierte Geburt, bei 199 setzten die Wehen spontan ein. Bei 33 Frauen konnte der erste Kontakt mit dem Kind direkt beobachtet werden; darunter waren 19 mit spontaner Geburt und 14 mit programmierter Geburt. Alle Frauen, die erreichbar waren, sollten über das Geburtserlebnis und den ersten Kontakt mit dem Neugeborenen berichten. Nach 6 Monaten wurden der Gesundheitszustand von Mutter und Kind sowie die Ernährungsweise des Säuglings erfragt.

Nach programmierter Geburt schienen die Frauen den ersten Kontakt mit ihrem Kind weniger emotional zu erleben als nach spontaner Geburt; die Unterschiede waren jedoch nicht signifikant (Fig. 1). Die Geburtsdauer war bei spontaner Geburt länger, aber die subjektive Einschätzung der Zeit differierte in den beiden Gruppen nicht. Frauen mit spontanen Wehen zeigten unter der Geburt eher Erschöpfungszustände. Mehr Analgetika wurden bei programmierter Geburt verabreicht. Keine Unterschiede zeigten sich in der Schilderung von Schmerz, Angst und Betäubtheit sowie in der Einschätzung der Geburt insgesamt (Tab. I).

Sechs Monate nach der Entbindung zeigten sich ebenfalls keine Unterschiede in der Einschätzung der Geburt sowie bezüglich des Gesundheitszustandes von Mutter und Kind und der Ernährungsproblematik. Mütter nach programmierter Geburt hatten ein größeres Selbstvertrauen bei der Pflege ihres Kindes, stillten jedoch seltener. Frauen nach Spontangeburten würden sich bei einer weiteren Schwangerschaft eher für den gleichen Entbindungsmodus entscheiden als Frauen nach programmierter Geburt.

Die Unterschiede zwischen den Gruppen können nur zum Teil durch persönlichkeitsbedingte Differenzen bei

den einzelnen Frauen erklärt werden. Wir meinen, daß beim Abwägen der Vor- und Nachteile einer programmierten Geburt auch Änderungen der Gefühlskomponenten der Frau mit berücksichtigt werden müssen: **bei programmierter Geburt ist die Frau weniger ängstlich, selbstbewußter, aber auch bezüglich ihres Kindes emotional weniger beteiligt als bei spontaner Geburt.**

Schlüsselwörter: Geburtserlebnis, Mutter-Kind-Beziehung, programmierte Geburt.

Résumé

Déclenchement électif du travail: étude clinique prospective, II: effets psychologiques

Différents auteurs ont affirmé que le déclenchement du travail peut avoir des effets psychologiques nuisibles sur les expériences du travail des femmes et sur l'interaction mère-enfant précoce. Les recherches sur ce sujet sont rares et dans de nombreux cas on ne fait pas la distinction entre le déclenchement électif et le déclenchement pour raisons médicales. Pour cette raison, les effets observés peuvent également avoir été provoqués par les complications médicales qui avaient conduit au déclenchement. Les différences dans l'expérience du travail peuvent également être expliquées par les différences de caractéristiques personnelles entre les femmes qui choisissent ou qui refusent le déclenchement du travail. Les influences du déclenchement du travail ne peuvent être établies valablement qu'à partir d'études prospectives.

Dans cette étude concernant 271 femmes avec une grossesse sans complication, les données concernant leurs expériences de la grossesse et leurs attentes du travail et de la maternité ont été recueillies avant le travail. Le travail a été électivement déclenché chez 72 femmes et le travail s'est déclenché spontanément chez 199. Pour 33 femmes, 19 avec un travail spontané et 14 avec un déclenchement, on a observé le premier contact avec leur nouveau-né. Toutes les femmes qui ont pu être contactées ont été interviewées sur leur expérience du travail et le premier contact avec leur enfant. Les mères ont été questionnées six mois après l'accouchement sur l'état de santé de la mère et de l'enfant et sur l'élevage de l'enfant.

On a estimé les mères déclenchées comme généralement moins impliquées émotionellement dans le premier contact avec leur nouveau-né que les mères avec un travail spontané, mais les différences ne sont pas significatives (Fig. 1). La durée du travail spontané est plus longue, mais l'expérience temporelle subjective ne diffère pas entre les deux groupes. Les femmes avec un travail spontané ont été plus fatiguées pendant le travail. Les médicaments analgésiques ont été donnés plus souvent aux femmes déclenchées. Il n'y a pas de différence apparente dans l'expérience rapportée de douleur et d'anxiété, de somnolence et dans l'évaluation du travail dans son ensemble (Tab. I).

Six mois après l'accouchement, il n'y a pas de différence apparente entre les deux groupes en ce qui concerne l'évaluation du travail, la santé de la mère et de l'enfant et les problèmes d'élevage. Les mères déclenchées sont plus sures d'elles pour prendre soin de leurs enfants, mais elles allaitent moins souvent au sein. En respectant le choix du mode de travail pour la grossesse suivante, la persistance du premier choix est grande chez les femmes qui ont eu un travail spontané en comparaison des femmes déclenchées.

Les différences de résultats entre les deux groupes peuvent être expliquées seulement en partie par les différences des caractéristiques personnelles. Les auteurs en concluent, que, en pesant les avantages et les désavantages du déclenchement du travail, on doit prendre en compte des modifications possibles du «feeling» de la femme: **il semble vraisemblable que la femme sera moins anxieuse et plus confiance en elle-même lorsque son travail est déclenché mais également moins impliquée émotionellement avec son nouveau-né, lorsqu' on la compare avec une femme ayant un travail spontané.**

Mots-clés: Déclenchement du travail, interaction mère-enfant.

Bibliography

[1] BELSEY, E. M., E. B. ROSENBLATT, B. A. LIEBERMAN, M. REDSHAW, J. CALDWELL, L. NOTARIANNI, R. L. SMITH, R. W. BEARD: The influence of maternal analgesia on neonatal behaviour: I. Pethidine. Br. J. Obstet. Gynaecol. 88 (1981) 398

[2] BOLTE, A., K. H. BREUKER, W. HAASE, J. STILLE: Vor- und Nachteile der terminierten Geburt. Geburtshilfe Frauenheilkd. 36 (1976) 220

[3] BREUKER, K. H., A. BOLTE, K. H. SCHLENSKER: Ergebnisse der terminierten Geburt. In: HILLEMANS, H. G., H. STEINER: Die programmierte Geburt. George Thieme Verlag, Stuttgart 1978

[4] BROADHURST, A., A. M. FLYNN, J. KELLY, P. F. LYNCH: The effect of ambulation in labour on maternal satisfaction, analgesia and lactation. In: CARENZA, L., L. ZICHELLA (eds.): Emotion and

reproduction; 5th international congress of psychosomatic obstetrics and gynecology. Academic Press, London 1979, p. 943
[5] CARTWRIGHT, A.: Mothers' experiences of induction. Br. Med. J. 2 (1977) 745
[6] DIXON, W. J. (ed.): BMDP statistical software. University California Press, Los Angeles 1981
[7] ENDL, J., W. LINGARD: Ergebnisse einer Schwangeren- und Wöchnerinnenbefragung. Wien. Klin. Wochenschr. 93 (1981) 197
[8] HAUKAMAA, M., M. PURHONEN, K. TERAMO: The monitoring of labor by telemetry. J. Perinat. Med. 10 (1982) 17
[9] HOWIE, P. W.: Induction of labour. In: CHARD, T., M. RICHARDS: Benefits and hazards of the new obstetrics. Spastic International Medical Publications, London 1977
[10] KIRKE, P. N.: Some mothers' views of care in labour. Br. J. Obstet. Gynaecol. 87 (1980) 1034
[11] KITZINGER, S.: Some mothers' experiences of induced labour. Submission to the Department of Health and Social Security from the National Childbirth Trust, 1975
[12] LEWIS, B. V., S. RANA, E. CROOK: Letter to the editor. Lancet 2 (1975) 1197
[13] MYERS, R. E., S. E. MYERS: Use of sedative, analgesic and anesthetic drugs during labor and delivery: Bane or boon? Am. J. Obstet. Gynecol. 133 (1979) 83
[14] OUNSTED, M. K., A. M. HENDRICK, L. M. M. MUTCH, A. A. E. CALDER, F. J. GOOD: Induction of labour by different methods in primiparous women. I. Some perinatal and postnatal problems. Early Hum. Dev. 2 (1978) 227
[15] OUNSTED, M., C. SIMON: Maternal attitudes to their obstetric care. Early Hum. Dev. 3 (1979) 201
[16] OUT, J. J., M. E. VIERHOUT, F. VERHAGE, H. J. DUIVENVOORDEN, H. C. S. WALLENBURG: Women's reasons for choosing an elective induction of labour. To be submitted
[17] RICHARDS, M. P. M.: Innovation in medical practice: obstetricians and the induction of labour in Britain. Soc. Sci. Med. 9 (1975) 595
[18] RICHARDS, M. P. M.: The induction and acceleration of labour: some benefits and complications. Early Hum. Dev. 1 (1977) 3
[19] RICHTER, D., H. STEINER, H. G. HILLEMANNS: The advantage of elective induction of labour by a psychosomatic approach. In: CARENZA, L., L. ZICHELLA (eds.): Emotion and reproduction; 5th international congress of psychosomatic obstetrics and gynecology. Academic Press, London 1979, p. 887
[20] STARKMAN, M. N.: Psychological responses to the use of the fetal monitor during labor. Psychosom. Med. 38 (1976) 269
[21] TYLLESKAR, J., O. FINNSTROM, I. LEIJON, S. HEDENSKOG, G. RYDEN: Spontaneous labor and elective induction — a prospective randomized study. I. Effects on mother and fetus. Acta Obstet. Gynecol. Scand. 58 (1979) 513
[22] VIERHOUT, M. E., J. J. OUT: De electieve inleiding van de baring. Een prospectief obstetrisch en psychologisch onderzoek. Doctoral diss., Rotterdam 1983
[23] VIERHOUT, M. E., J. J. OUT, H. C. S. WALLENBURG: Elective induction of labor: a prospective clinical study. I: Obstetric and neonatal effects. J. Perinat. Med. 13 (1985) 155
[24] YUDKIN, P., A. M. FRUMER, A. B. ANDERSON, A. C. TURNBULL: A retrospective study of induction of labour. Br. J. Obstet. Gynaecol. 86 (1979) 257

Received August 13, 1984. Accepted October 26, 1984.

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